AMENDMENTS TO THE CLAIMS

1. (currently amended) An image recognition device, for detecting ~~a non-circular target pattern~~ arbitrary images, comprising:

~~an~~ element matching means arranged and configured to match each of a plurality of input pattern elements obtained ~~by dividing~~ from an input image ~~into a plurality of regions~~ with ~~the~~ corresponding target pattern elements ~~of said non-circular~~ obtained from a target ~~pattern~~ image; and

~~a non-circular~~ pattern detection means arranged and configured to detect relative positions of said plurality of input pattern elements compared with a multiple magnification reference arrangement data of each of said target pattern elements in order to recognize whether said input image includes said target ~~pattern~~ image;

wherein said multiple magnification reference arrangement data corresponds to magnification levels no greater than a level ~~where~~ at which a human eye can distinguish between an original and a non-zero magnification of the original.

2. (currently amended) An image recognition device, for detecting ~~a non-circular target pattern~~ arbitrary images, comprising:

a dictionary generating unit ~~which stores~~ arranged and configured to store dictionary data for each of a plurality of pattern elements obtained from a ~~element in said non-circular~~ target pattern;

2

an element matching unit, which compares and matches arranged and configured to compare and match input image pattern data which is provided as input against said dictionary data stored in said dictionary generating unit;

an arrangement data generating unit which stores the position data representing an the arrangement of each of the target pattern elements at a plurality of magnifications, each of said plurality of magnifications being no greater than a level where a human eye can distinguish between an original and a non-zero magnification of the original; and

a pattern detection unit which, which based on the output of said element matching unit and said position data from said arrangement data generating unit, determines whether said target pattern can be found in said input image pattern data.

3. (original) The image recognition device of claim 2, wherein said dictionary generating unit comprises a software routine.

4. (original) The image recognition device of claim 2, wherein said element matching unit comprises a software routine.

5. (original) The image recognition device of claim 2, wherein said arrangement data generating unit comprises a software routine.

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6. (original) The image recognition device of claim 2, wherein said pattern detection unit comprises a software routine.

7. (currently amended) An image processing device, for detecting ~~a non-circular target pattern~~ <u>arbitrary images</u> at multiple magnification levels each below a threshold where said magnification can be readily identified <u>by a human eye</u> as a <u>non-zero</u> magnified version of an original ~~by a human eye~~, the device comprising:

an element matching means to match a plurality of input pattern elements obtained by dividing an input image into a plurality of regions with the corresponding target pattern elements of ~~said non-circular~~ <u>a</u> target pattern;

a pattern detection means to detect relative positions of said plurality of input pattern elements compared with a reference arrangement data, at said multiple magnifications, of each of said target pattern elements in order to recognize whether said input image includes said target pattern; and

a control means to control output of said input image to an output device when said pattern detection means recognizes said input image includes said target pattern.

8. (original) The image processing device of claim 7, wherein said output device comprises a printer.

4

9. (original) The image processing device of claim 7 further comprising a scanner to input said input image into said image processing device.

10. (original) The image processing device of claim 7 further comprising a digital camera to input said input image into said image processing device.

11. (original) The image processing device of claim 7 further comprising a floppy disc to input said input image into said image processing device.

12. (original) The image processing device of claim 7 further comprises a personal computer to facilitate copying of said input image.

13. (currently amended) A recording medium containing computer code for implementing an image recognition method for detecting a non-circular target pattern, arbitrary images said recording medium comprising:

a storage area having stored thereon a computer code, said computer code comprising:

an element matching means arranged and configured which when executed by a computer causes said computer to match a plurality of input pattern elements obtained by dividing an input image into a plurality of regions with corresponding target pattern elements of said non-circular a target pattern; and

5

a pattern detection means <u>executable by said computer causes said computer</u> to detect relative positions of said plurality of input pattern elements compared with a multiple magnification reference arrangement data of each of said target pattern elements in order to recognize whether said input image includes said target pattern;

wherein said multiple magnification reference arrangement data corresponds to magnification levels no greater than a level where a human eye can distinguish between an original and a <u>non-zero</u> magnification <u>of said original</u>.

14. (currently amended) A method of processing an ~~input~~ image ~~to detect a non-circular reference image~~, said method comprising:

inputting ~~said non-circular~~ <u>a</u> reference image, <u>said reference image being an arbitrary image</u>;

~~determining target pattern elements for said reference image by~~ dividing said reference image into a plurality of ~~regions~~ <u>target pattern elements</u>;

determining reference arrangement data for each of said target pattern elements at a plurality of magnifications, said plurality of magnifications being no greater than a level where a human eye can distinguish between an original and ~~an~~ <u>a non-zero</u> magnification <u>of said original</u>; ~~and~~

inputting data for an input image;

6

~~determining input elements for said input image by~~ dividing said input image

into ~~said~~ a plurality of ~~regions~~ input elements corresponding to said target pattern

elements of said reference image; and

comparing said target pattern elements and said input elements.

15. (currently amended) The method of claim 14, wherein said comparing

comprises comparing positions of said target pattern elements and said input elements

relative ~~position~~ to each other using said reference arrangement data.

16. (previously presented)   The method of claim 14, further comprising halting

if said target pattern elements include said input elements based on said comparing.

17. (original) The method of claim 14 further comprising changing the color of a

reproduction of said input image if said target pattern elements include said input

elements based on said comparing.

18. (original) The method of claim 14 further comprising reducing the

resolution of a reproduction of said input image if said target pattern elements include

said input elements based on said comparing.

19. (original) The method of claim 14 further comprising superimposing an alphanumeric character on top of a reproduction of said input image if said target pattern elements include said input elements based on said comparing.

20. (previously presented) The image recognition device of claim 1, wherein each of said multiple magnification reference arrangement data corresponds to a magnification level no greater approximately 15%.

21. (previously presented) The image recognition device of claim 2, wherein each of said plurality of magnifications is no greater than approximately 15%.

22. (previously presented) The image processing device of claim 7, wherein said threshold each of said plurality of magnifications is no greater than approximately 15%.

23. (previously presented) The recording medium of claim 13, wherein each of said multiple magnification reference arrangement data corresponds to a magnification level no greater than approximately 15%.

24. (previously presented) The method of claim 14, wherein each of said plurality of magnifications is no greater than approximately 15%.